WHAT IS CLAIMED IS:

1.   Apparatus for transferring data, comprising:

a first gateway, adapted to operate as a first switch in a first storage area network (SAN) operating according to a Fibre Channel protocol, and which is coupled to receive a data-frame addressed to a virtual address of a receiving client operative in a second SAN; and

a second gateway, adapted to operate as a second switch in the second SAN, which operates according to the Fibre Channel protocol substantially independently of the first SAN, and which is coupled to receive the data-frame from the first gateway, and is adapted to look up a local address of the receiving client in the second SAN by using at least part of the virtual address as an index to an incoming-data-frame translation table, and to transmit the data-frame addressed to a local address of the receiving client.

2.   Apparatus according to claim 1, wherein the second SAN comprises a plurality of switches configured as a virtual switch, and wherein the virtual address comprises a pointer to the virtual switch.

3.   Apparatus according to claim 1, wherein at least one of the first and second SANs comprises a plurality of switches configured as a virtual switch, so that a total of a number of switches comprised in the first and second SANs is able to exceed a total number of switches allowed by the Fibre Channel protocol.

4.   Apparatus according to claim 3, and comprising a second plurality of clients directly coupled to the plurality of switches, so that a total of a number of clients comprised in the first and second SANs is able to exceed a total number of directly-coupled clients allowed by the Fibre Channel protocol.

5.   Apparatus according to claim 1, wherein the first gateway is adapted to look up a global address of a transmitting client in the first SAN by using at least part of a transmitting-client-local-address as an index to an outgoing-data-frame translation table.

6.   Apparatus according to claim 1, and comprising a coupling which is adapted to transfer data-frames between the first and the second gateways.

7.   Apparatus according to claim 6, wherein the coupling comprises one or more intermediate SANs which are coupled to transfer data-frames therebetween.

8.   Apparatus according to claim 6, wherein the coupling comprises one or more data-frame transfer systems chosen from a group of systems comprising a fiber optic connection, an Ethernet connection, an electrically conductive connection, an electromagnetic transmission, a synchronous optical network (SONET) connection, a synchronous digital hierarchy (SDH) connection, an asynchronous transfer mode (ATM) connection, and a distributed network.

9.   Apparatus according to claim 1, wherein the first SAN comprises a first plurality of clients each having a respective first local address, and the second SAN comprises a second plurality of clients each having a respective second local address, such that at least some of the first local addresses are substantially identical to at least some of the second local addresses.

10.   Apparatus according to claim 1, and comprising:
        a first coupling connecting the first and second gateways;
        a third gateway adapted to operate as a third switch in the first SAN and which is coupled to receive the data-frame; and
        a second coupling connecting the third and second gateways, so that the data-frame transfers via the second coupling if the first coupling fails.

11.   A method for transferring data, comprising:

receiving an initial data-frame in a first gateway operating as a first switch in a first storage area network (SAN), operating according to a Fibre Channel protocol, the initial data-frame comprising a virtual address of a receiving client operative in a second SAN, operating according to the Fibre Channel protocol substantially independently of the first SAN;

transmitting a final data-frame from a second gateway operating as a second switch in the second SAN, the final data-frame comprising a local address of the receiving client;

conveying at least some of the data-frames between the first and the second SAN via a coupling connecting the SANs; and

converting the initial data-frame to the final data-frame using at least part of the virtual address as an index to an incoming-data-frame translation table comprised in the second gateway.

12.   A method according to claim 11, and comprising configuring a plurality of switches comprised in the second SAN as a virtual switch, wherein the virtual address comprises a pointer to the virtual switch.

13.   A method according to claim 11, wherein at least one of the first and second SANs comprises a plurality of switches grouped as a virtual switch, so that a total of a number of switches comprised in the first and second SANs is able to exceed a total number of switches allowed by the Fibre Channel protocol.

14.   A method according to claim 13, and comprising directly coupling a second plurality of clients to the plurality of switches, so that a total of a number of clients comprised in the first and second SANs is able to exceed a total number of directly-coupled clients allowed by the Fibre Channel protocol.

15. A method according to claim 11, and comprising looking up in the first gateway a global address of a transmitting client in the first SAN by using at least part of a transmitting-client-local-address as an index to an outgoing-data-frame translation table.

16. A method according to claim 11, wherein conveying at least some of the data-frames comprises conveying the at least some of the data-frames via one or more SANs intermediate the first and second SANs.

17. A method according to claim 11, wherein the first SAN comprises a first plurality of clients each having a respective first local address, and the second SAN comprises a second plurality of clients each having a respective second local address, such that at least some of the first local addresses are substantially identical to at least some of the second local addresses.